REMARKS

Claims 4 and 7-11 are pending in this application. Claims 1-3, 5, and 6 have been cancelled. Claims 4 and 7-11 have been amended. Support for the amendments is found in the specification and claims as filed. Attached hereto is a marked-up version of the changes made to the claims by the current amendment. The attached page is captioned "VERSION WITH MARKINGS TO SHOW CHANGES MADE."

Claim Rejection - 35 U.S.C. § 112, second paragraph

Claim 5 has been rejected under 35 U.S.C. §112, second paragraph. Although Applicants do not agree with the propriety of the rejection, Claim 5 has been cancelled without prejudice, solely to facilitate issuance of the claims indicated to be allowable. The rejection is therefore moot.

Claim Rejections - 35 U.S.C. §102(b) and §103(a)

The following claims have been rejected: Claim 1 under 35 U.S.C. §102(b) as being anticipated by Pluedemann, U.S. Reissue 34,675; Claims 1-3 under 35 U.S.C. §102(b) as being anticipated by Wang et al., U.S. 5,316,855; Claims 1-3 under 35 U.S.C. §102(b) as being anticipated by Uryu, JP 7-333208 A2; and Claims 2, 3, and 6 under 35 U.S.C. §103(a) as being obvious over Pluedemann, U.S. Reissue 34,675. Although Applicants do not agree with the propriety of the rejections, Claims 1-3 and 6 have been cancelled without prejudice, solely to facilitate issuance of the claims indicated to be allowable. The rejections are therefore moot.

Allowable Subject Matter

Applicants gratefully acknowledge the Examiner's indication of allowability with respect to dependent Claims 4 and 7-11. Applicants have placed the objected claims into condition for allowance by making amendments necessary to accomplish the procedural result of placing the objected claims into independent form. These amendments had no effect on the scope of the objected claims. Claims 4 and 7-11 are therefore believed to be in condition for allowance. Applicants reserve the ability to pursue the rejected claims, or similar claims, in one or more continuing patent applications.

CONCLUSION

In view of the foregoing amendments and remarks, it is respectfully submitted that the present application is in condition for allowance. Should the Examiner have any remaining concerns which might prevent the prompt allowance of the application, the Examiner is respectfully invited to contact the undersigned at the telephone number below.

Respectfully submitted,

KNOBBE, MARTENS, OLSON & BEAR, LLP

Dated: 9/16/02

By: _____

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VERSION WITH MARKINGS TO SHOW CHANGES MADE

Deleted text is indicated by **[bracketed boldface]**. Added text is indicated by **underlined boldface**.

IN THE CLAIMS:

Claims 1-3, 5, and 6 have been cancelled.

Claims 4 and 7-11 have been amended as follows:

4. (Amended) **[The process according to claim 2]** **A process for preparing an organic silicate polymer having a flexible bridge unit in the network comprising the step of:**

reacting the following component (a) with the following component (b) in an organic solvent after addition of water and catalyst:

(a) organosilane of the formula $R^1_mR^2_nSiX_{4-m-n}$ (where each of R^1 and R^2 which may be the same or different, is a non-hydrolysable group selected from hydrogen, alkyl, fluorine-containing alkyl or aryl group; X is a hydrolysable group selected from halide, alkoxy or acyloxy; and m and n are integers of from 0 to 3 satisfying $0 \leq m+n \leq 3$) or a partially hydrolyzed condensate thereof; and

(b) organic bridged silane of the formula $R^3_pY_{3-p}Si\text{-}M\text{-}SiR_{4q}Z_{3-q}$ (where each of R^1 and R^4 which may be the same or different, is a non-hydrolysable group selected from hydrogen, alkyl, fluorine-containing alkyl, alkenyl or aryl; each of Y and Z which may be the same or different, is a hydrolysable group selected from halide, alkoxy or acyloxy; M is alkylene or arylene group; and p and q are integers of from 0 to 2) or a cyclic oligomer with organic bridge unit (Si-M-Si), wherein the organic bridged silane is synthesized by reacting a silane monomer containing a Si-H with a silane monomer containing aliphatic unsaturated carbon ($-CH=CH_2$) in the presence of a catalyst.

7. (Amended) **[The process according to claim 2]** **A process for preparing an organic silicate polymer having a flexible bridge unit in the network comprising the step of:**

reacting the following component (a) with the following component (b) in an organic solvent after addition of water and catalyst:

(a) organosilane of the formula $R^1_mR^2_nSiX_{4-m-n}$ (where each of R^1 and R^2 which may be the same or different, is a non-hydrolysable group selected from hydrogen, alkyl, fluorine-containing alkyl or aryl group; X is a hydrolysable group selected from halide, alkoxy or acyloxy; and m and n are integers of from 0 to 3 satisfying $0 \leq m+n \leq 3$) or a partially hydrolyzed condensate thereof; and

(b) organic bridged silane of the formula $R^3_pY_{3-p}Si\text{-}M\text{-}SiR_{4q}Z_{3-q}$ (where each of R^1 and R^4 which may be the same or different, is a non-hydrolysable group selected from hydrogen, alkyl, fluorine-containing alkyl, alkenyl or aryl; each of Y and Z which may be the same or different, is a hydrolysable group selected from halide, alkoxy or acyloxy; M is alkylene or arylene group; and p and q are integers of from 0 to 2) or a cyclic oligomer with organic bridge unit (Si-M-Si),

wherein the organic silicate polymer has a weight average molecular weight within a range of from 500 to 100,000.

8. (Amended) An interlayer dielectric film for a semiconductor device comprising [the] an organic silicate polymer [of claim 1] having a flexible bridge unit in the network prepared by crosslinking reaction between the following components (a) and (b):

(a) organosilane of the formula $R^1_mR^2_nSiX_{4-m-n}$ (where each of R^1 and R^2 which may be the same or different, is a non-hydrolysable group selected from hydrogen, alkyl, fluorine-containing alkyl or aryl group; X is a hydrolysable group selected from halide, alkoxy or acyloxy; and m and n are integers of from 0 to 3 satisfying $0 \leq m+n \leq 3$) or a partially hydrolyzed condensate thereof; and

(b) organic bridged silane of the formula $R^3_pY_{3-p}Si\text{-}M\text{-}SiR_{4q}Z_{3-q}$ (where each of R^1 and R^4 which may be the same or different, is a non-hydrolysable group selected from hydrogen, alkyl, fluorine-containing alkyl, alkenyl or aryl; each of Y and Z which may be the same or different, is a hydrolysable group selected from halide, alkoxy or acyloxy; M is alkylene or arylene group; and p and q are integers of from 0 to 2) or a cyclic oligomer with organic bridge unit (Si-M-Si).

9. (Amended) A semiconductor device comprising [the] an interlayer dielectric film [of claim 8] comprising an organic silicate polymer having a flexible bridge unit in the network prepared by crosslinking reaction between the following components (a) and (b):

(a) organosilane of the formula $R^1_mR^2_nSiX_{4-m-n}$ (where each of R^1 and R^2 which may be the same or different, is a non-hydrolysable group selected from hydrogen, alkyl, fluorine-containing alkyl or aryl group; X is a hydrolysable group selected from halide, alkoxy or acyloxy; and m and n are integers of from 0 to 3 satisfying $0 \leq m+n \leq 3$) or a partially hydrolyzed condensate thereof; and

(b) organic bridged silane of the formula $R^3_pY_{3-p}Si\text{-}M\text{-}SiR_{4q}Z_{3-q}$ (where each of R^1 and R^4 which may be the same or different, is a non-hydrolysable group selected from hydrogen, alkyl, fluorine-containing alkyl, alkenyl or aryl; each of Y and Z which may be the same or different, is a hydrolysable group selected from halide, alkoxy or acyloxy; M is alkylene or arylene group; and p and q are integers of from 0 to 2) or a cyclic oligomer with organic bridge unit (Si-M-Si).

10. (Amended) A process for preparing an interlayer dielectric film for a semiconductor device comprising the steps of:

a) dissolving **[the]** an organic silicate polymer **[of claim 1]** in a solvent to obtain a solution, the organic silicate polymer having a flexible bridge unit in the network prepared by crosslinking reaction between the following components (i) and (ii):

(i) organosilane of the formula $R^1_mR^2_nSiX_{4-m-n}$ (where each of R^1 and R^2 which may be the same or different, is a non-hydrolysable group selected from hydrogen, alkyl, fluorine-containing alkyl or aryl group; X is a hydrolysable group selected from halide, alkoxy or acyloxy; and m and n are integers of from 0 to 3 satisfying $0 \leq m+n \leq 3$) or a partially hydrolyzed condensate thereof; and

(ii) organic bridged silane of the formula $R^3_pY_{3-p}Si\text{-}M\text{-}SiR_{4q}Z_{3-q}$ (where each of R^1 and R^4 which may be the same or different, is a non-hydrolysable group selected from hydrogen, alkyl, fluorine-containing alkyl, alkenyl or aryl; each of Y and Z which may be the same or different, is a hydrolysable group selected from halide, alkoxy or acyloxy; M is alkylene or arylene group; and p and q are integers of from 0 to 2) or a cyclic oligomer with organic bridge unit (Si-M-Si);

b) spin coating the **[dissolved]** solution obtained in step a) on a substrate to form a film;

c) drying the **[coating]** film obtained in step b) to obtain a dried film; and

d) curing the dried film obtained in step c) at a temperature of 300 to 500 °C, whereby an interlayer dielectric film is obtained.

11. (Amended) A process for preparing a semiconductor device comprising [the] an interlayer dielectric film [prepared according to the process of claim 10], the process comprising the steps of:

a) dissolving an organic silicate polymer in a solvent to obtain a solution, the organic silicate polymer having a flexible bridge unit in the network prepared by crosslinking reaction between the following components (i) and (ii):

(i) organosilane of the formula $R^1_mR^2_nSiX_{4-m-n}$ (where each of R^1 and R^2 which may be the same or different, is a non-hydrolysable group selected from hydrogen, alkyl, fluorine-containing alkyl or aryl group; X is a hydrolysable group selected from halide, alkoxy or acyloxy; and m and n are integers of from 0 to 3 satisfying $0 \leq m+n \leq 3$) or a partially hydrolyzed condensate thereof; and

(ii) organic bridged silane of the formula $R^3_pY_{3-p}Si\text{-}M\text{-}SiR_{4q}Z_{3-q}$ (where each of R^1 and R^4 which may be the same or different, is a non-hydrolysable group selected from hydrogen, alkyl, fluorine-containing alkyl, alkenyl or aryl; each of Y and Z which may be the same or different, is a hydrolysable group selected from halide, alkoxy or acyloxy; M is alkylene or arylene group; and p and q are integers of from 0 to 2) or a cyclic oligomer with organic bridge unit (Si-M-Si);

b) spin coating the solution obtained in step a) on a substrate to form a film;

c) drying the film obtained in step b) to obtain a dried film; and

d) curing the dried film obtained in step c) at a temperature of 300 to 500 °C, whereby an interlayer dielectric film is obtained.

AMEND
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